

Client: Tyler

PT/OT/Supplier: Toby Bergantino, Numotion

Location: Rocky Hill, Connecticut

Tyler is a 23 year old young man with the diagnosis of cerebral palsy. He currently lives with his grandparents and is active in the community and in his day program. Although he only weighs 100 pounds, he is extremely strong. He has broken numerous items on his manual wheelchair over the years and when he breaks something, he cannot use his wheelchair until repairs are made and he ends up in bed. Tyler works with Toby Bergantino at Numotion.



Tone Management

While tone management can be a helpful tool in reducing overall muscle tone and, as a result, forces against the wheelchair seating system and frame, these strategies do not work for everyone. Tyler has been assessed at three different hospitals and had a Baclofen pump trial; however, tone management has simply not been successful.

Tyler has significant contractures at the hips and knees, a 5" leg length discrepancy, and is seated in a Precision Rehab molded seating system in a Quickie IRIS tilt manual wheelchair. He has a Smart Drive system which his grandparents (who are in their 70's) use to move the wheelchair, particularly when going up ramps.

Dynamic Seating

Tyler has used a Seating Dynamics Dynamic Rocker Back interface (DRBi) and Dynamic Footrests for about 5 years. Since that time, he has only broken shoeholders and his head support pads and hardware. As a result, he recently also received Dynamic Head Support Hardware. He is using Whitmyer head pads.

DRBi: Despite exerting high enough force to break backcanes, the firmest elastomer did not provide enough movement. Toby placed the Medium elastomers to provide enough movement while diffusing force. The elastomers need to be replaced about every 18 months. Tyler is no longer breaking items on the wheelchair and his pelvis is not elevating in the seating system. He actually is experiencing less shear forces using the DRBi with a molded back as Tyler's trunk remains in relation to the back.

Dynamic Footrests: Tyler had previously broken his footplates, the welds on the footrest hangers and at the junction where these are mounted. He had also broken the bolts on the frame's footrest receiver. His legs would extend and adduct with such force that he would compress the edge of the cushion and contact the hardware underneath the medial knee block. The Dynamic Footrests are mounted at 90 degrees, due to his tight hamstrings. Tyler can telescope downward on both sides and can elevate/extend on one side. The wheelchair remains at about a 5 degree tilt to clear the casters, despite the flared front end.

Quick Notes

Challenges:

- ✓ Equipment Breakage
- ✓ High Tone
- ✓ Extension
- ✓ Pain & Tolerance
- ✓ Client Injury

Areas affected:

- ✓ Head
- ✓ Back
- ✓ Trunk
- ✓ Knees
- ✓ Feet

Equipment Used:

- ✓ [Dynamic Rocker Back](#)
- ✓ [Dynamic Footrests](#)
- ✓ [Dynamic Head Support](#)
- ✓ [Sunrise Medical Quickie IRIS](#)
- ✓ [PRM \(Precision Rehab Manufacturing\)](#)



Dynamic Seating at the hips, knees, and head has been very beneficial for Tyler.

Dynamic Head Support

Hardware: Tyler was breaking numerous areas of the pad and hardware. He now has Whitmyer pads on Seating Dynamics dynamic hardware. Tyler tended to reach back and grab the head pads in the past. Toby attached a 'hand hold' off the backcane for Tyler to grab instead (what a great idea!). Toby is also hopeful the new dynamic hardware will help keep the head pads in position.

Using these three dynamic components together has been very effective for Tyler. Forces are diffused by each component. However, when one component has already diffused some of his

extension, the other components do not need to work as hard. The combination is cumulative in reducing active tone and protecting his equipment.

Results

Tyler's body is generally quieter, as he is not trying to relieve pressure on his hips or hamstrings, unless he is excited. He is not extending or demonstrating dystonia as frequently. His grandparents report that this intervention helps him as well as them, and that Tyler is participating more.

Please visit our YouTube channel or website to see a video of Tyler using his Dynamic Seating!

Toby Bergantino, ATP
Numotion
Rocky Hill, Connecticut

"I've used it (the Dynamic Head Support Hardware) in the past with others and it solved all my problems."

About the Author

Michelle Lange is an occupational therapist with 30 years of experience and has been in private practice, Access to Independence, for over 10 years. She is a well-respected lecturer, both nationally and internationally and has authored numerous texts, chapters, and articles. She is the co-editor of *Seating and Wheeled Mobility: a clinical resource guide*, editor of *Fundamentals in Assistive Technology*, 4th ed., NRRTS Continuing Education Curriculum Coordinator and Clinical Editor of *Directions* magazine. Michelle is on the teaching faculty of RESNA. Michelle is a member of the Clinician Task Force. Michelle is a certified ATP, certified SMS and is a Senior Disability Analyst of the ABDA.
